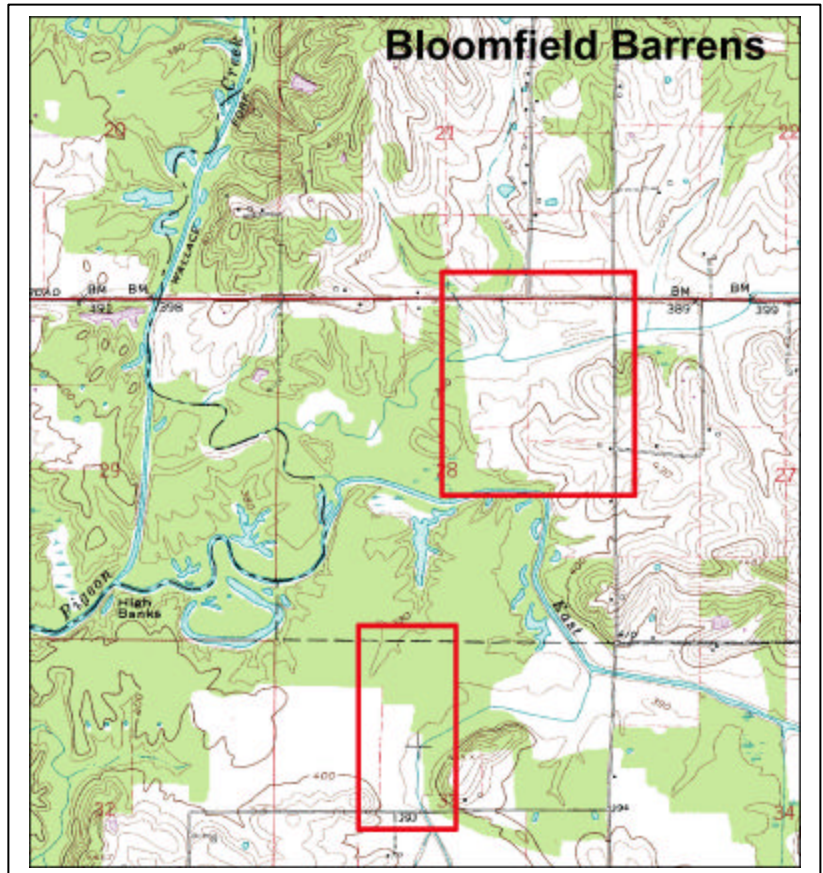


## BLOOMFIELD BARRENS ENHANCEMENT (IN-23)

### 1.0 Location

The proposed Bloomfield Barrens Enhancement project area is located in Spencer County, Indiana, approximately 1.5 to 2 miles northeast of Bloomfield, Indiana. The project area is in the Little Pigeon Creek watershed, approximately 20 miles upstream from its confluence with the Ohio River at Ohio River mile (ORM) 773. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).



### 2.0 Project Goal, Description, and Rationale

The Indiana Department of Natural Resources Division of Nature Preserves currently owns the Bloomfield Barrens State Nature Preserve. The preserve currently contains approximately 840 acres of land, which consists of post oak flatwoods and clay barrens. The primary goals of the Bloomfield Barrens Enhancement project are the acquisition of land adjacent to the nature preserve and the reforestation of disturbed areas. Reforestation of additional lands will reduce the amount of forest fragmentation in the area and provide habitat for a number of neotropical migrant birds. Another goal is the eradication of invasive exotic plants to maintain the natural habitat qualities for plants and wildlife.



### 3.0 Existing Conditions

**Terrestrial/Riparian Habitat:** The current terrestrial habitat on the Bloomfield Barrens project area includes stands of post oak (*Quercus stellata*) flatwoods, clay barrens, old field habitats, and cleared agricultural areas. A portion of the area is used for row crop agriculture, with soybeans, corn, and wheat as the major crops produced. Some of the former row crop areas have been replanted with native tree species while other areas provide old field habitat.



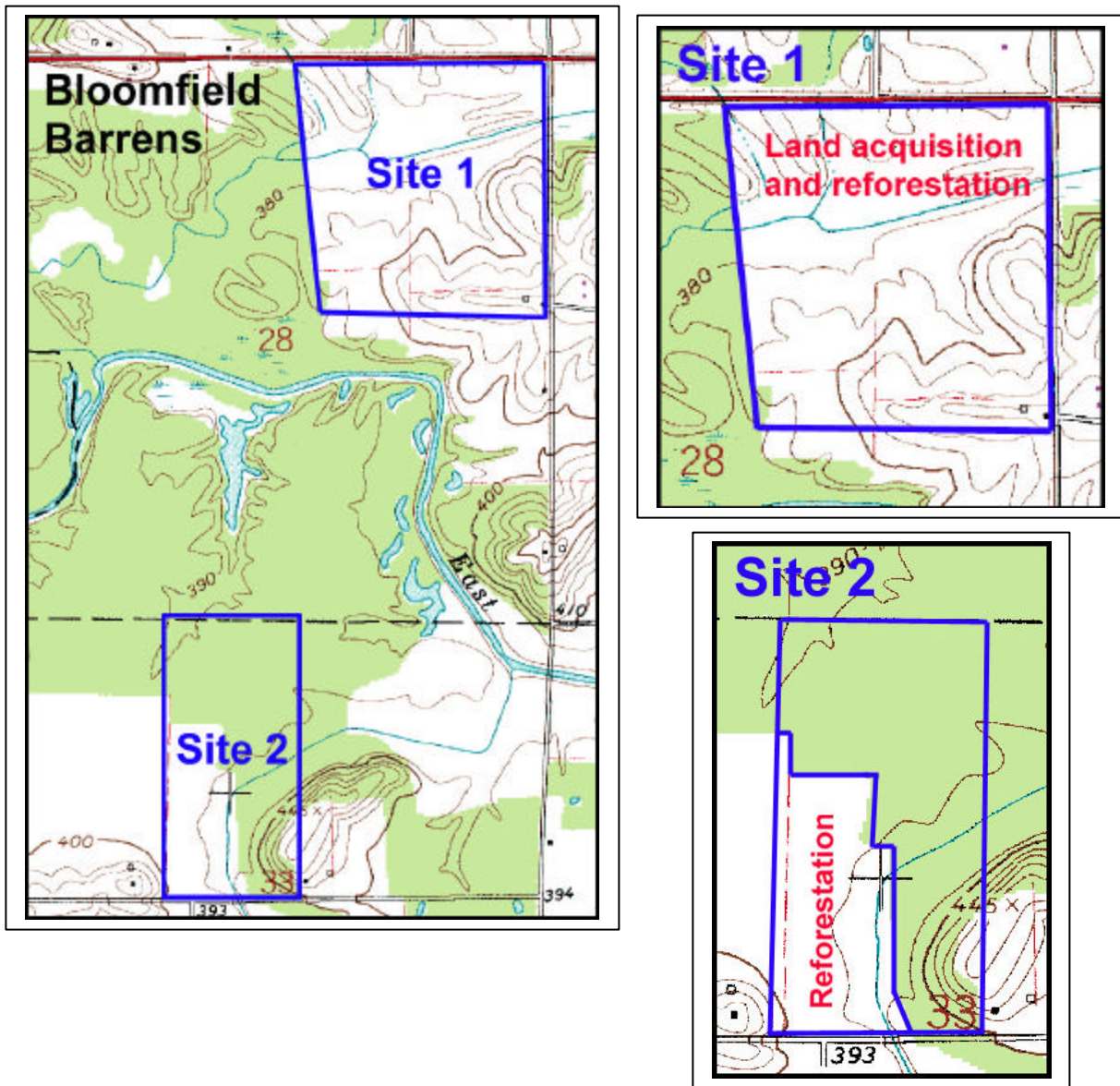
**Aquatic Habitats:** The aquatic resources on the Bloomfield Barrens project area primarily consist of small intermittent streams that run through the site. The agricultural fields are drained by small ditches that bisect the site.

**Wetlands:** There are no jurisdictional wetland resources present on the Bloomfield Barrens project area.

**Federally-Listed Threatened and Endangered Species:** According to the U.S. Fish and Wildlife Service (USFWS), there are no federally-listed threatened or endangered species known to occur in Spencer County, Indiana. The state of Indiana lists several state endangered and threatened species known to occur in Warrick and Spencer Counties.



#### 4.0 Project Diagram



#### 5.0 Land Acquisition and Reforestation Strategy

The primary concern is the protection of existing rare communities in the project area. Reforestation and restoration will help protect and expand the existing communities. All land acquisitions would be purchased from willing sellers.

**Site 1:** The lands that lie south of State Route 62 and north of the East Fork of Little Pigeon Creek, as shown in the Site 1 blue border in the project diagram section, would be considered a high priority for purchase. There are approximately 150 acres in the Site 1 area that are planned for reforestation.

**Site 2:** The lands that lie south of the East Fork of Little Pigeon Creek, as shown in the blue border in the project diagram section, are already owned by the Indiana Department of Natural Resources. There are approximately 80 acres in the Site 2 area and approximately 40 acres would be reforested.

## 6.0 Cost Estimate (Land Acquisition and Reforestation)

<b>Table 1. Project Costs.</b>	
<b>Item</b>	<b>Cost</b>
Prepare Project Management Plan	\$2,500
Site 1 Land Acquisition (150 acres)	\$150,000
Reforestation on Site 1 (150 acres)	\$33,400
Reforestation on Site 2 (40 acres)	\$8,900
Mobilization for Reforestation @ 12.5%	\$5,000
<b>TOTAL</b>	<b>\$199,800</b>

## 7.0 Schedule

<b>Table 2. Acquisition and Development Schedule</b>	
<b>Item</b>	<b>Time</b>
Project Management Plan	1 year
Site 1 Land Acquisition	1-5 years
Site 1 Reforestation and Development	1-8 years
Site 2 Reforestation and Development	1-5 years
<b>TOTAL</b>	<b>8 Years</b>

## 8.0 Expected Ecological Benefits

**Terrestrial/Riparian Habitats:** Land acquisition resulting from the Bloomfield Barrens project would increase the management activities currently underway. Reforestation of the area would decrease the amount of forest fragmentation in the area and would benefit a number of neotropical migrant bird species, as well as numerous other migrant and resident wildlife species.

**Aquatic Habitats:** There would be no foreseeable beneficial impacts to aquatic habitats in the project area as a result of implementation of the proposed project.

**Wetlands:** There would be no foreseeable beneficial impacts to jurisdictional wetlands in the project area as a result of implementation of the proposed project.

**Federally-Listed Threatened and Endangered Species:** Since there are no federally-listed threatened or endangered species in Spencer County, no foreseeable beneficial impacts would result from implementing this project.

**Socioeconomic Resources:** A possible long-term socioeconomic benefit resulting from the implementation of this project would be increased recreational (wildlife viewing) opportunities.

## 9.0 Potential Adverse Environmental Impacts

**Terrestrial/Riparian Habitats:** There would be no foreseeable adverse impacts to terrestrial or riparian habitats as a result of implementing this project.

**Aquatic Habitats:** There would be no foreseeable adverse impacts to aquatic habitats as a result of implementing this project.

**Wetlands:** There would be no foreseeable adverse impacts to wetland habitats as a result of implementing this project.

**Federally-Listed Threatened and Endangered Species:** Since there are no federally-listed threatened or endangered species in Spencer County, no foreseeable adverse impacts would result from implementing this project.

**Socioeconomic Resources:** There would be a potential for adverse socioeconomic impacts. Implementation of the proposed project would take agricultural lands out of production, which would result in a long-term decrease in farming income.

## **10.0 Mitigation**

There would be no mitigation necessary for this site.

## **11.0 Preliminary Operation and Maintenance Costs:**

There would be no operation or maintenance costs associated with this project.

## **12.0 Potential Cost Share Sponsor(s)**

- ◆ Indiana Department of Natural Resources
- ◆ The Nature Conservancy
- ◆ Ducks Unlimited
- ◆ Private corporations

## **13.0 Expected Life of the Project**

As presently envisioned the Bloomfield Barrens project area would be managed in perpetuity for the benefit of natural resources by the Indiana Department of Natural Resources.

## **14.0 Hazardous, Toxic, and Radiological Waste Considerations**

Potential impacts of hazardous, toxic, and radiological waste (HTRW) at the site were visually assessed during a site visit.

### **Site Inspection Findings.**

The project involves selected disturbed land within Bloomfield Barrens State Nature Preserve, in Spencer County, Indiana. Target restoration lands are located in the area of Little Pigeon Creek approximately 20 miles upstream from its confluence with the Ohio River at ORM 773.

The following environmental conditions were considered when conducting the July 1, 1999 project area inspection:

- |                             |                       |
|-----------------------------|-----------------------|
| ◆ Suspicious/Unusual Odors; | ◆ Dirt/Debris Mounds; |
| ◆ Discolored Soil;          | ◆ Ground Depressions; |
| ◆ Distressed Vegetation;    | ◆ Oil Staining;       |

- ◆ Above Ground Storage Tanks (ASTs);
- ◆ Underground Storage Tanks (USTs);
- ◆ Landfills/Wastepiles;
- ◆ Impoundments/Lagoons;
- ◆ Drum/Container Storage;
- ◆ Electrical Transformers;
- ◆ Standpipes/Vent pipes;
- ◆ Surface Water Discharges;
- ◆ Power or Pipelines;
- ◆ Mining/Logging; and
- ◆ Other.

None of the environmental conditions listed above were observed on the project area.

## **15.0 Property Ownership & River Access**

Selected data on properties immediately adjacent to or within each concept site was collected from the county courthouse of the respective county of each site. Data collected included map and parcel identification number, property owner's name and mailing address, acreage of the potentially affected parcel, and market value of the parcel. This procedure involved obtaining a plat or parcel map of the site and surrounding area which identified each parcel with a corresponding map and parcel number. The map\parcel identification number was subsequently used to determine the property owner's name and mailing address from records in the County Assessor's or County Auditor's office. Plat\parcel maps were collected for each site.

The market value of each parcel as contained in the property tables reflects the assessed valuation to supposedly market value ratio used in each State for taxation purposes. These assessed values reflect 1998 assessments. The assessed valuation ratio is 33.3 percent for Indiana.

The above ratios were used to approximate the market value of each property. However, in many instances the resultant market value calculated under the above procedure is considerably below the actual value of the land in the real market. Local real estate brokers could provide a more accurate estimate of actual land values.

The collected property data indicate that both public and private lands are adjacent to the Bloomfield Barrens Enhancement area. Private lands will be needed and/or disturbed for this project. The majority of the property under consideration is in private ownership, therefore easements or other agreements will need to be made prior to further progress.

<b>Table 3. Property Characteristics</b>				
<b>Site Name: Bloomfield Barrens Enhancement (two sites)</b>				
<b>Location: Spencer County, Indiana</b>				
<b>Map/Parcel Number</b>	<b>Owner</b>	<b>Mailing Address</b>	<b>Market Value</b>	<b>Acreage</b>
<i>Section 28</i>				
04-28/004	Indiana Department of Natural Resources	402 West Washington St. Indianapolis, IN 46204		20.9
04-28/005	Florence Harris	Route 1, Box 175 Gentryville, IN. 47537	\$44,190	134.1
04-28/008	Mary Jean Shourds	Rural Route 1, Box 260 Rockport, IN 47635	\$30,390*	5.0
<i>Section 33</i>				
04-33/003,004	Indiana Department of Natural Resources	402 West Washington St. Indianapolis, IN 46204		65.00
04-33/007.001	unknown			40.00
04-33/008	Randall Stoltz	839 Greengate Court Evansville, IN. 47715	\$7,130*	40.00
* Denotes improvements on property.				

**APPENDIX A      Threatened & Endangered Species**



**APPENDIX B Plan Formulation and Incremental Analysis Checklist**

**Project Site Location:** The proposed Bloomfield Barrens Enhancement project area is located in Spencer County, Indiana, approximately 1.5 to 2 miles northeast of Bloomfield, Indiana. The project area is in the Little Pigeon Creek watershed, approximately 20 miles upstream from its confluence with the Ohio River at Ohio River mile (ORM) 773. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).

**Description of Plan selected:** The primary goals of the Bloomfield Barrens Enhancement project are the acquisition of land adjacent to the nature preserve and the reforestation of disturbed areas. Reforestation of additional lands will reduce the amount of forest fragmentation in the area and provide habitat for a number of neotropical migrant birds.

**Alternatives of the Selected Plan:**

Smaller Size Plans Possible? Yes and description

Reduce the amount of land to be reforested.

Larger Size Plan Possible? Yes and description

Increase the amount of land acquisition and restoration in the area.

Other alternatives? No

Restore/Enhance/Protect Terrestrial Habitats? ☒ Yes Objective numbers met ☒ T4

Restore, Enhance, & Protect Wetlands? ☐ No Objective numbers met ☐

Restore/Enhance/Protect Aquatic Habitats? ☐ No Objective numbers met ☐

**Type species benefited:** Migratory and resident wildlife species that utilize forested habitat.

**Endangered species benefited:** None

**Can estimated amount of habitat units be determined:** Approximately 300 acres of land would be reforested.

**Plan acceptable to Resources Agencies?**

**U.S. Fish & Wildlife Service?**

**State Department of Natural Resources?** Yes Indiana Dept. of Natural Resources

**Plan considered complete?** Yes **Connected to other plans for restoration?**

**Real Estate owned by State Agency?** Yes **Federal Agency?** No

**Real Estate privately owned?** Yes

**If privately owned, what is status of future acquisition** Acquisition underway

**Does this plan contribute significantly to the ecosystem structure or function requiring restoration? What goal or values does it meet in the Ecosystem Restoration Plan?**

Yes     The plan provides additional habitat and habitat diversity for terrestrial and avian species.

**Is this restoration plan a part of restoration projects planned by other agencies? (i.e. North American Waterfowl Management Plan, etc.)**

Unknown

**In agencies opinion is the plan the most cost effective plan that can be implemented at this location?**

**Can this plan be implemented more cost effectively by another agency or institution?**

**Yes / No**

**Who:**

**From an incremental cost basis are there any features in this plan that would make the project more expensive than a typical project of the same nature? For embayment type plans is there excessive haul distance to disposal site? More expensive type disposal? Spoil that requires special handling/disposal?**

---

**Potential Project Sponsor:**

**Government Entity:** \_\_\_\_\_

**Non-government Entity** \_\_\_\_\_

---

Corps Contractor \_\_\_\_\_ Date \_\_\_\_\_

U.S. Fish & Wildlife Representative \_\_\_\_\_ Date \_\_\_\_\_

State Agency Representative \_\_\_\_\_ Date \_\_\_\_\_

U.S. Army Corps of Engineers Representative \_\_\_\_\_ Date \_\_\_\_\_

## **Terrestrial Habitat Objectives**

- T1     Riparian Corridors
- T2     Islands
- T3     Floodplains
- T4     Other unique habitats (canebrakes, river bluffs, etc.)

## **Wetland Habitat Objectives**

- W1     Forested Wetlands: Bottomland Hardwoods
- W2     Forested Wetlands: Cypress/Tupelo Swamps and other unique forested wetlands
- W3     Scrub/Shrub Emergent Wetlands: isolated from the river except during high water and contiguous (includes scrub/shrub wetlands in embayments and island sloughs)

## **Aquatic Habitat Objectives**

- A1     Backwaters (sloughs, embayments, oxbows, bayous, etc.)
- A2     Riverine submerged and aquatic vegetation
- A3     Sand and gravel bars
- A4     Riffles/Runs (tailwaters)
- A5     Pools (deep water, slow velocity, soft substrate)
- A6     Side Channel/Back Channel Habitat
- A7     Fish Passage
- A8     Riparian Enhancement/Protection

**APPENDIX C          Micro Computer-Aided Cost Engineering System (MCACES)**